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REMARKS

In the Office Action, the Examiner noted that claims 1-27 are pending in the application and that claims 1-27 are rejected. In view of the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. §102 or are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are now in condition for allowance.

I. REJECTION OF CLAIMS 1-3, 7, 12, and 13 UNDER 35 U.S.C. §102

The Examiner rejected claims 1-3, 7, 12, and 13 as being anticipated by the Carsello patent (United States patent 6,317,474, issued November 13, 2001, hereinafter Carsello). The rejection is respectfully traversed.

Carsello teaches a method and apparatus for estimating the time-of-arrival (TOA) of a synchronization signal sent simultaneously from at least two non-collocated transmitters. More specifically, the method comprises calculating segment Fourier transform values corresponding to at least three predetermined tone frequencies and creating a set consisting of these segment Fourier transform values. The method also involves computing a set of TOA values that correspond to the set of segment Fourier transform values in addition to determining a set of segment weights from the set of segment Fourier transform values. Lastly, the method includes estimating the TOA of the synchronization signal from the set of segment TOA values and the set of segment weights (See column 1, lines 37-57).

Carsello, however, does not teach each and every element of Applicants' invention as recited in claim 1. Namely, Carsello does not teach or suggest the determination of the position of the mobile station, wherein the position determination is made at the mobile station. Specifically, Applicants' claim 1 positively recites:

1. A method for determining the location of a mobile station, comprising:
receiving a plurality of simulcast signals from respective base stations;
determining relative time of arrival information for the received plurality of simulcast signals; and
determining the position of the mobile station. (Emphasis added)

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The Applicants' invention claims a method for determining the location of a mobile station utilizing a plurality of simulcast signals sent from a plurality of base stations. More specifically, the signal TOA differences among the received signals can be used to determine the location of the mobile station. Furthermore, this determination is made by the mobile receiver.

The Examiner alleges that Carsello inherently teaches the determination of the mobile station's position. The Applicants respectfully argue that Carsello fails to teach such a point. The Applicants contend that Carsello does not inherently teach Applicants' invention as recited in claim 1, since Carsello does not necessarily teach that TOA must be used for determining the position of the mobile station. For a missing element to be inherent, "extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." In re Roberston, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (internal quotations omitted) (emphasis added). For example, the method for estimating the TOA of a signal taught by Carsello could be used to synchronize signals for a particular quadrature amplitude modulation (QAM) technique utilized for obtaining higher data rates (See Carsello, column 1, lines 16-22) or the like. Therefore, the use of TOA is not necessarily or inherently used for determining the location of a mobile device.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). Since Carsello does not teach the determination of the position of the mobile station, Carsello does not teach each and every element of Applicants' invention recited in claim 1. Therefore, Applicants contend that claim 1 is not anticipated by Carsello and, as such, fully satisfies the requirements of 35 U.S.C. §102.

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Dependent claims 2-3, 7, 12, and 13 depend, either directly or indirectly, from claim 1 and recite additional features thereof. As such and for the exact same reasons set forth above, the Applicants submit that claims 2-3, 7, 12, and 13 are not anticipated by the teachings of Carsello. Therefore, the Applicants submit that claims 2-3, 7, 12, and 13 fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

II. REJECTION OF CLAIMS 18, 21, AND 24 UNDER 35 U.S.C. §102

The Examiner rejected independent claims 18, 21, and 24 as being anticipated by the Carsello patent (United States patent 6,317,474, issued November 13, 2001, hereinafter Carsello). The rejection is respectfully traversed.

Carsello, which is discussed above, does not teach each and every element of Applicants' invention as recited in claim 18. Namely, Carsello does not teach or suggest the reception of mobile station location information. Specifically, Applicants' claim 18 positively recites:

18. A method for receiving location information for a mobile station, comprising:
transmitting simulcast signals to the mobile station; and
receiving mobile station location information from the mobile station determined from relative time of arrival information for the simulcast signals. (Emphasis added)

The Applicants' invention claims a method for receiving location information for a mobile station. The sections cited by the Examiner (Carsello, column 3, lines 10-46 and column 5, lines 2-8) are completely devoid of any mention or suggestion of mobile station location information. In fact, these sections do not include any mention of a mobile station receiving any type of information. Thus, the Applicants contend that claim 18 is not anticipated by Carsello and, as such, fully satisfies the requirements of 35 U.S.C. §102.

Similarly, Carsello does not teach each and every element of Applicants' invention as recited in claim 21. Namely, Carsello does not teach or suggest the identification of a mobile station's location. Specifically, Applicants' claim 21 positively recites:

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21. A mobile station, comprising:
a receiver for receiving simulcast signals from a plurality of base stations; and
a processor for determining time of arrival information for the received simulcast signals and identifying a location of the mobile station. (Emphasis added)

The Applicants' invention claims a mobile station with a processor that is capable of identifying the mobile station's location after determining TOA information. The sections cited by the Examiner (Carsello, column 3, lines 10-46 and column 5, lines 2-8) are completely devoid of any mention or suggestion of a mobile station identifying its location. In fact, these sections completely fail to mention a mobile station identifying a location of any type. Thus, the Applicants contend that claim 21 is not anticipated by Carsello and, as such, fully satisfies the requirements of 35 U.S.C. §102.

Lastly, Carsello does not teach each and every element of Applicants' invention as recited in claim 24. Namely, Carsello does not teach or suggest the determination of a mobile station's location. Specifically, Applicants' claim 24 positively recites:

24. A wireless network for providing location specific information to a mobile station, comprising:
a plurality of base stations for transmitting simulcast signals;
a mobile station for receiving the simulcast signals and determining a location of the mobile station. (Emphasis added)

The Applicants' invention claims a wireless network with a mobile station that is capable of determining its own location. The sections cited by the Examiner (Carsello, column 3, lines 10-46 and column 5, lines 2-8) are completely absent of any mention or suggestion of a wireless network with a mobile station identifying its location. In fact, these sections are devoid of any mention of a wireless station or mobile station identifying a location of any type. Thus, the Applicants contend that claim 24 is not anticipated by Carsello and, as such, fully satisfies the requirements of 35 U.S.C. §102.

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III. REJECTION OF CLAIM 27 UNDER 35 U.S.C. §102

The Examiner rejected claim 27 as being anticipated by the Budnik et al. (United States patent 6,052,064, issued April 18, 2000, hereinafter Budnik). The rejection is respectfully traversed.

Budnik teaches a method and apparatus in a wireless messaging system for dynamic creation of directed simulcast zones. The system is optimized for the transmission of an outbound message from a plurality of base transmitters to a portable subscriber unit. In response to an inbound message from a portable subscriber unit, a fixed portion (which comprises a controller and a plurality of base transmitters) of the system makes an estimate of the portable subscriber unit's position.

Budnik does not teach each and every element of Applicants' invention as recited in claim 27. Namely, Budnik does not teach or suggest the reception of mobile station location information at the base stations sent from a mobile station. Specifically, Applicants' claim 27, as amended, positively recites:

27. A wireless network, comprising:
a plurality of base stations for transmitting simulcast signals to mobile stations and receiving mobile station location information from at least one of the mobile stations to broadcast location specific information to the mobile stations. (Emphasis added)

The Applicants' invention claims a wireless network for receiving mobile station location information at a plurality of base stations from at least one mobile station. The section cited by the Examiner (Budnik, column 9, line 40 to column 10, line 4) fails to mention the reception of the mobile station location information from a mobile station. Conversely, Budnik describes the origination of the location information at the fixed portion (i.e., controller and base transmitters). Therefore, if the fixed portion creates this location information, the fixed portion cannot receive the information (i.e., the fixed portion already possessed the information). Thus, the Applicants respectfully argue that claim 18 is not anticipated by Budnik and, as such, fully satisfies the requirements of 35 U.S.C. §102.

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IV. REJECTION OF CLAIMS UNDER 35 U.S.C. §103

A. Claims 4-6, 8, 9, 19, 22, and 25

The Examiner rejected claims 4-6, 8, 9, 19, 22, and 25 as being unpatentable over Carsello in view of Baum et al. (United States patent 5,867,478, issued February 2, 1999, hereinafter Baum). The rejection is respectfully traversed.

Carsello is discussed above.

Baum teaches a method, system, software, and apparatus for synchronous coherent orthogonal frequency division multiplexing (SC-OFDM). More specifically, each of a plurality of SC-OFDM transmitters is synchronized to a reference, which is derived from a common source, for transmitting SC-OFDM signals to a plurality of SC-OFDM receivers. The SC-OFDM signals each have a cyclic extension, and the SC-OFDM signals from each SC-OFDM transmitter include at least one pilot code in accordance with the predetermined pilot code scheme.

The Examiner's attention is directed to the fact that Carsello and Baum (either singly or in any permissible combination) fail to disclose a method for determining the location of a mobile station as described by the Applicants' invention. The combination of the Carsello and Baum references fails to teach or suggest the Applicants' invention as a whole. As mentioned above, Carsello teaches a method and apparatus for estimating the TOA of a synchronization signal sent simultaneously from at least two non-collocated transmitters. Carsello does not teach, suggest, or mention that the identification or determination of a mobile station's location. Carsello also fails to teach, suggest, or mention the reception of mobile station location information from a mobile station.

Similarly, Baum also does not teach, suggest, or mention the determination (or identification) of the location of the mobile station or the reception of mobile station location information from a mobile station. Instead, Baum discloses a method, system, software and an apparatus relating to SC-OFDM. Since, Baum clearly fails to bridge the substantial gap existing between the Applicants' invention and Carsello, the

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Applicants contend that the combination of Carsello and Baum does not teach the Applicants' invention as a whole.

Therefore, even if the two references could somehow be operably combined (and the Applicants submit that the references cannot be properly combined), the resulting combination of Carsello and Baum would still fail to mention or suggest the determination or identification of the location of a mobile station as claimed in independent claims 1, 21, and 24. Similarly, this combination would also fail to mention or suggest the reception of mobile station location information from a mobile station as claimed in claim 18.

Thus, the Examiner has failed to present a prima facie case of obviousness in combining Carsello with Baum to arrive at the claimed invention of Applicants' claims 4-6, 8, 9, 19, 22, and 25 since these claims depend, either directly or indirectly, from claims 1, 18, 21, and 24. Therefore, the Applicants submit that claims 4-6, 8, 9, 19, 22, and 25 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Withdrawal of the rejection is respectfully requested.

B. Claims 10, 11, 14-16, 23, and 26

The Examiner rejected claims 10, 11, 14-16, 23, and 26 as being unpatentable over Baum in view of Budnik. The rejection is respectfully traversed.

The Examiner's attention is directed to the fact that Baum and Budnik (either singly or in any permissible combination) fail to disclose a method for determining the location of a mobile station as described by the Applicants' invention. The combination of the Baum and Budnik references fails to teach or suggest the Applicants' invention as a whole. As mentioned above, Baum teaches a method, system, software, and apparatus for synchronous coherent orthogonal frequency division multiplexing (SC-OFDM). Baum does not teach, suggest, or mention that the identification or determination of a mobile station's location. More importantly, Baum fails to teach, suggest, or mention that the determination of the mobile station's location is conducted at the mobile station (as opposed to the base stations).

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Similarly, Budnik also does not teach, suggest, or mention the determination (or identification) of the position of the mobile station conducted at the mobile station. Conversely, Budnik discloses a method and apparatus in a wireless messaging system for dynamic creation of directed simulcast zones. Budnik teaches a fixed portion (comprising a controller and a plurality of base transmitters) that makes an estimate of the portable subscriber unit's position in response to an inbound message from a portable subscriber unit (see Budnik, abstract). Budnik is distinguished from the present invention in the regard that the Applicants' invention determines the mobile station's location at the mobile station, not the fixed portion (i.e., base station/transmitter).

Since, Budnik clearly fails to bridge the substantial gap existing between the Applicants' invention and Baum, the Applicants contend that the combination of Baum and Budnik does not teach the Applicants' invention as a whole.

Therefore, even if the two references could somehow be operably combined (and the Applicants submit that the references cannot be properly combined), the resulting combination of Baum and Budnik would still fail to mention or suggest the determination or identification of the location of a mobile station at the mobile station as claimed in independent claims 1, 21, and 24.

Thus, the Examiner has failed to present a prima facie case of obviousness in combining Baum with Budnik to arrive at the claimed invention of Applicants' claims 10, 11, 14-16, 23, and 26 since these claims depend, either directly or indirectly, from claims 1, 21, and 24. Therefore, the Applicants submit that claims 10, 11, 14-16, 23, and 26 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Withdrawal of the rejection is respectfully requested.

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CONCLUSION


Thus, Applicants submit that none of the claims presently in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. §103. Consequently, Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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